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ABSTRACT

In the fall of 1990, the Computer Services Section of the Department of Public Instruction in North Carolina began a project to study how the use of an online catalog in the media center would influence student academic achievement and provide a vehicle for students to gain the skills needed to access information. For a year, the media professionals in two high schools in Davidson County worked with an online catalog to collect student information and evaluate its impact on instruction. This four-part report begins with a brief overview of the Online Catalog Project, including the software and equipment used. Project activities and outcomes are presented in the second part, including copies of the student and teacher questionnaires together with analyses of the responses and analyses of the data obtained from online catalog user logs, nonfiction circulation records, and student writing samples. The third part, Project Conclusions, includes the major finding--i.e., an examination of the study as a whole indicates that the online catalog had a significant and positive effect on the ability of students to access information and become more independent in retrieving information--as well as helpful hints and a brief statement of the benefits of instruction in online searching to the research process. The fourth part contains instructional materials developed during the project, including guide sheets, vocabulary, student activity sheets, lesson plans, and research assignments intended to provide guided practice using the online catalog with special emphasis on keyword and Boolean strategies. (DB)

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Media Automation ...

... Impact on students

Computer Services
Division of Media and Technology Services
NC Department of Public Instruction

Bob Etheridge, State Superintendent
Raleigh, North Carolina

October 1991

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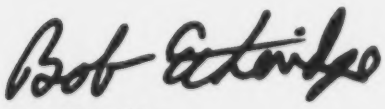
FOREWORD

Accessing information and resources in an accurate and timely manner is a skill all students need in our world today. In the fall of 1990, the Computer Services Section of the Department of Public Instruction began a project to study how the use of an online catalog in the media center would impact student achievement and provide a vehicle for students to gain the skills needed to access information.

For a year, the media professionals in two high schools in Davidson County worked with an online catalog to collect student information and evaluate its impact on instruction. This booklet contains materials developed during the project.

All of the individuals involved in the project are to be commended for their efforts, with a special thanks to Central Davidson High School and West Davidson High School which will continue to serve as visitation sites for others interested in the use of an online catalog in the media center.



Bob Etheridge
State Superintendent

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Overview

Access to the library media center collection is provided by an accurate and efficient retrieval system that uses the expanding searching capabilities of the computer.

...from *Information Power*

MEDIA CENTER AUTOMATION:
AN OVERVIEW OF THE ONLINE CATALOG PROJECT

Goal
To determine how the use of an online catalog in the media center would impact student achievement and provide a vehicle for students to gain skills needed to access information.

Project Sponsor
Computer Services, Division of Media and Technology Services, Department of Public Instruction, 116 West Edenton Street, Raleigh, North Carolina 27603-1712, 919/733-3193.

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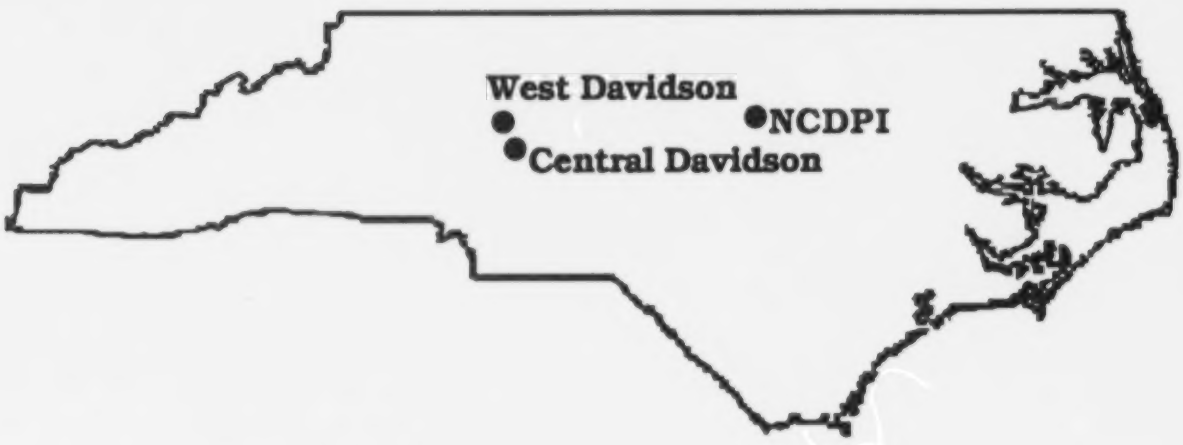
Project Site Description
In the fall of 1990-91 school year, media centers at Central Davidson High School and West Davidson High School were fully automated with Circulation Plus and Catalog Plus from Follett Software Company running on Tandy microcomputers. West Davidson High School has approximately 610 students and 43 faculty members. The media collection contains 9,000 books plus audiovisual materials. The second site, Central Davidson High School, has 970 students in grades 9-12 with 62 faculty members. Their collection is approximately 13,000 items that are housed in a two-level facility.

Project Description
The media professionals at these two schools were asked to help evaluate the impact of an online catalog on student achievement and its use as a vehicle for students to access information. In October 1990, onsite coordinators and NCDPI Computer Services consultants met to identify and develop the project and activities which include:

- teaching information accessing
- conducting teacher and student surveys
- maintaining online catalog user logs
- collecting nonfiction circulation records
- collecting student assignments: search practice and writing assignments

North Carolina's Online Catalog Project Sites and Participants



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Activities and Outcomes

Keyword searches will change the research process for students. For example, if students need information on the Civil War, how many know to look under the Subject: United States--History--1860-1865--Civil War? Instead many would look under Civil War. When that strategy was used at one school, 0 sources appear. If the students use the Title search function, they find about 8 sources. However, if they use Keyword search function, they locate 88 sources.

Surveys

Two types of surveys were developed--one for students and one for teachers.

Student Survey

Purpose:
The purpose of the student survey was to determine (1) how students conduct searches, (2) whether an online catalog was helpful to the search process, and (3) did students need more instruction on Keyword, Boolean, and general online catalog use.

Description:
The student survey was made-up of fourteen questions--eleven questions requiring a yes or no response, one question requiring the student to circle the correct options, and two questions asking for student comments on the strengths and weaknesses of the online catalog.

How the survey was administered:
The student surveys were administered to students at both pilot sites during the period from November to January. At each site the survey was completed by students selected at random using the online catalog. (Some students had received instruction on using the online catalog, others had not.) One hundred students completed all or part of the survey.

Summary of student responses:
Student survey responses indicate that the majority of students

- 69% used the Subject function in conducting their searches,
- Keyword function was second with 14%,
- followed by the Title function at 12%,
- the Author function was seldom used by students at 5%, and
- Call Number and Series functions were not used.

Other Survey results were:

- 3/4 of the respondents indicated that the Keyword function made library resources easier to identify.
- 2/3 of the students indicated that they were able to locate sufficient resources for their assignments.
- 2/3 of the responses indicated that computer printouts were helpful.
- 14% of the students responding to the survey attempted Boolean" searches.
- 1/3 of the students felt that they needed further instructions on using "Boolean" operators.
- 3/4 of the students indicated that they would use Keyword function again.

Half of the students felt that using the online catalog allowed them more time to read, develop their ideas, organize their materials and write their document.

Students responding to the survey made these comments about the strengths and weaknesses of the online catalog:

- What was the best feature of the online catalog?
  Speed, subject, Keyword, notes, information, easy, more efficient, saves time
- What feature of the online catalog did you like least?
  Call #, Author, Keyword, Series, not enough stations,
  need more info, don't know, more computers

Conclusions: Student Survey

Students who used the online catalog were able to locate information they needed. Most students continued to use the Subject function most of the time, but some students were willing to try the Keyword function. Only about 14% of reporting students used Boolean strategy in the search process; so perhaps more exposure and instruction in Boolean strategy are needed. Students found computer printouts helpful, felt that using the online catalog made their search for resources more efficient, and allowed them more time to focus attention on reading, organizing, and writing their document.

Student Online Catalog Survey

1.	I conducted searches by: (Circle one.)	Author	Title	Subject	Keyword
2.	Did you use the Keyword function of the online catalog?	Yes		No	
3.	Does the Keyword function make library resources easier to identify?	Yes		No	
4.	Were you able to locate sufficient resources for your assignment in this media center?	Yes		No	
5.	Did you locate AV resources on your topic in the online catalog?	Yes		No	
6.	Did using the online catalog allow you more time for reading, organizing, and writing your document?	Yes		No	
7.	Did having abundant sources of information hinder the organizing and synthesizing process?	Yes		No	
8.	Were computer printouts helpful?	Yes		No	
9.	Did you use other library sources (ex. *NewsBank)* to identify resources?	Yes		No	
10.	Did you use Boolean search strategies?	Yes		No	
11.	Do you need additional instruction on Keyword and Boolean strategies?	Yes		No	
12.	Will you use Keyword function to locate resources for other assignments?	Yes		No	
13.	What was the best feature of the online catalog?				
14.	What feature of the online catalog did you like least?				

Student Online Catalog Survey (Results)

1.	I conducted searches by:	Author 5	Title 12	Subject 69	Keyword 14
2.	Did you use the Keyword function of the online catalog?	Yes 60		No 40	
3.	Does the Keyword function make library resources easier to identify?	Yes 74		No 23	
4.	Were you able to locate sufficient resources for your assignment in this media center?	Yes 73		No 37	
5.	Did you locate AV resources on your topic in the online catalog?	Yes 24		No 74	
6.	Did using the online catalog allow you more time for reading, organizing, and writing your document?	Yes 68		No 29	
7.	Did having abundant sources of information hinder the organizing and synthesizing process?	Yes 50		No 48	
8.	Were computer printouts helpful?	Yes 76		No 21	
9.	Did you use other library sources (ex. *NewsBank)* to identify resources?	Yes 69		No 22	
10.	Did you use Boolean search strategies?	Yes 14		No 83	
11.	Do you need additional instruction on Keyword and Boolean strategies?	Yes 38		No 62	
12.	Will you use Keyword function to locate resources for other assignments?	Yes 77		No 20	
13.	What was the best feature of the online catalog?	speed, subject, Keyword, notes, information, easy, more efficient, saves time			
14.	What feature of the online catalog did you like least?	Call #, Author, Keyword, Series, not enough stations, need more info, don't know, more computers			

Teacher Surveys

Purpose:
The purpose of the teacher survey was to obtain the perception of the teachers on (1) how effectively students were able to use the online catalog, (2) whether the use of an online catalog impacted the quality of student work, and (3) what media center staff can do to address search strategies better.

Description:
The faculty survey was comprised of fourteen questions. Thirteen of the questions required a yes or no response, addressing such issues as the students ability to use the online catalog and how it impacted his research skills. Several questions addressed the quantity and appropriateness of materials. One question requested teacher comments on how the media center staff could better train students/teachers to use "search strategies."

How the survey was administered:
The survey was completed only by teachers whose classes were given instruction in Keyword and "Boolean" strategy by the media coordinators. Therefore the results of the teacher survey reflect the views of a small number of teachers.

Summary of teacher responses:
Teachers who completed the survey reported that their students were able to use the Keyword function to locate resources and that the online catalog allowed students to make effective use of their time. Teachers responded that computer printouts were helpful to students. When asked to respond to the following: "Please comment on how the media center staff can better train students/faculty to use 'search strategies' and the search stations," one teacher commented: "Every teacher and student should receive training." Responding teachers felt that the number of search stations was appropriate.

Conclusions: Teacher survey
The definitive results of the teacher survey are limited due to the small number of survey responses. However teachers who did respond felt that the online catalog was a viable tool for students to use in locating resources. They thought that their students were able to use the Keyword function, make use of the computer printouts, and find information efficiently. Teachers surveyed indicated that they thought students/teachers would benefit from formal instruction from media center staff on search strategies.

ONLINE CATALOG SURVEY
FACULTY

1.	Students understand that the Keyword function on the online catalog is an enhanced search procedure.	Yes			No
2.	Instruction in the use of the Keyword function enabled students to use Boolean search strategies.	Yes			No
3.	The use of Keyword function broadened the scope of the search and accessibility of resources.	Yes			No
4.	Completed papers/projects showed evidence of use of a greater number of resources than previously.	Yes			No
5.	Students were able to locate sufficient resources in the media center for the assignment.	Yes			No
6.	Students were able to find information more quickly that previously.	Yes			No
7.	The online catalog allowed students to make effective use of their time.	Yes			No
8.	Using the automated catalog allowed students more time for reading, assembling and synthesizing information, and for writing the final document.	Yes			No
9.	Additional instruction in the Keyword function is needed.	Yes			No
10.	What would be a satisfactory number of search stations for the media center?	2	3	4	more
11.	Was the availability of printouts a factor in the successful assembling of information for the project?	Yes			No
12.	Did planning with the media coordinator affect the research process?	Yes			No
13.	Have you personally found the use of Keyword to be helpful in your research?	Yes			No

14. Please comment on how the media center staff can better train students/faculty to use "search strategies" and search stations. (Use the back of this sheet.)

Online Catalog User Logs

Purpose:
The purpose of the Online Catalog User Logs was to collect information about which search function (Title, Author, Call Number, Subject, or Keyword) students were using to locate their resources. Another purpose was to determine whether or not students were using Keyword search.

Description:
Online Catalog User Logs were placed at each search station to be completed randomly by students when they conducted searches with the online catalog.Users were asked to check the method of search they used from the options on the check sheet. The options listed were:Title, Author, Call Number, Subject or Keyword.

Results:
27 out of 76 students responded that they used Keyword function when using the online catalog. (See Online Catalog User Log sample.)

18 searches were conducted using Title function
19 searches were conducted using Author function
02 searches were conducted using Call Number function
15 searches were conducted using Subject function
27 searches were conducted using Keyword function

Conclusion:
Student information from the Online Catalog User Logs indicates that students used the Keyword function most frequently followed by Author, Title, and Subject. Call Number function was seldom used. The log results indicate that efforts to encourage students to use Keyword search strategies were effective.

ONLINE SEARCH

CHECK THE METHOD USED TO SEARCH!

DATE_____

TITLE:	AUTHOR:	CALL NUMBER:	SUBJECT	KEYWORD
TITLE:	AUTHOR:	CALL NUMBER:	SUBJECT	KEYWORD

Nonfiction Circulation Records

Purpose:
The purpose of collecting nonfiction circulation records was to determine whether or not the availability and use of an online catalog would affect the volume of nonfiction materials used by students.

Description:
Media professionals at all five Davidson County high schools generated the same report using the *Circulation Plus* software program to determine the number of nonfiction books (000-999, not including reference books) checked out during a period of eight months. Enrollment figures were taken from the seventh month report to be used to calculate the number of items circulated per student. The results of the two online catalog (*Circ+/Cat+*) schools were compared with the three high schools that have *Circulation Plus* only.

Results:

- average number of nonfiction items circulated for *Circ* + only users in 8 months = 2.56 items circulated per student

- average nonfiction items circulated for *Circ+/Cat+* users in 8 months = 7.33 circulation items per student

  •West Davidson High School: 8.92 items circulated per student
  •Central Davidson High School: 5.73 items circulated per student

(See "Circulation of Non-fiction Books Chart on next page)

Conclusion:
The two high schools with online catalog experienced a dramatic increase in the number of nonfiction books checked out by students compared to the three schools with circulation software only. The participants concluded that this data validates their premise that the availability and use of an online catalog provides more effective access to materials.

COMPARISON OF NONFICTION CIRCULATION: *Circ+/Cat+* Sites Compared with *Circ+* Only Sites

Basis:

- Circulation statistics taken from *Circ+* reports
- Enrollment figures taken from seventh month report
- Nonfiction collection data from books in 000-999
- Figures do not include biographies
- Rows D and E represent *Cat+* users

schools	number of students	number of nonfiction titles in collection	number of nonfiction titles per student	total nonfiction circulation 8/90-4/91	actual number of items circulated per student
A	695	7221	10.39	2584	3.72
B	770	3707	4.81	1823	2.37
C	768	6764	8.81	1231	1.60
D	551	3824	6.94	4914	8.92
E	843	5559	6.59	4831	5.73

Conclusions:

- Average nonfiction circulation for *Circ+* Only users in 8 months=2.56 circulation per student
- Average nonfiction circulation for *Circ+/Cat+* users in 8 months=7.33 circulation per student

Collecting Student Writing Samples

Purpose:
To determine the impact of an online catalog on the quality of student writing by comparing writing samples from students who used an online catalog and students who did not use an online catalog.

How writing samples were collected:
Media professionals collected writing samples from one group of students who used the online catalog and from a comparable group of students who did not use the online catalog. Some writing samples have been collected.

Results:
Writing sampes have not been formally evaluated, but teachers whose students participated in research projects using the online catalog (Search Plus Component of Circ+/Cat+) felt that the new search techniques the online catalog made available to students was very helpful.

Teachers and media professionals observed that after instruction by media coordinators and teachers in the use of the Keyword function of Search Plus, students were able to locate nearly twice as many resources as were available through a Subject search. Using the Boolean search function allowed students to narrow the search and locate only information which was relevant to their topic. The ability to print lists of materials made selection of usable materials quicker and easier. Speed of the search and the ability to locate materials easily improved students' attitudes toward the search process and their willingness to explore more resources. Teachers felt that use of the online catalog greatly improved their students'research skills and writing skills.

Conclusions

In these days of budget-consciousness we can't afford to have materials in the media center that stand unused simply because students don't know they exist. The online catalog has greatly increased circulation of materials.

Judy LeCroy
Davidson County Schools

FINDINGS AND SUMMARY

Goal:
The goal of this study was to determine how the use of an online catalog in the media center would impact student achievement and provide a vehicle for students to gain skills needed to access information.

Findings:
Individual components of our study provide only limited evidence of the benefits of the online catalog to student achievement. However, when all the pieces of the study--the student surveys, teacher surveys, online user logs, nonfiction circulation and writing samples--are examined as a whole it is evident that the online catalog has had a significant and positive effect on the ability of students to access information and become more independent in retrieving information.

Summary:
Student information from the Online Catalog User Logs indicated that students are using Keyword search strategies most frequently and that efforts to encourage students to use Keyword search strategies have been effective.

The significant increase in nonfiction books checked out by students in online catalog schools indicates that students have and use greater access when an online catalog is available.

Student surveys indicated that students were willing to try the Keyword function and that students found computer printouts helpful. They felt that using the online catalog made their search for resources more efficient and allowed them more time to focus attention on reading, organizing, and writing their document.

Teachers who responded on the teacher survey felt that the online catalog was a viable tool for students to locate resources and that their students were able to use the Keyword function, make use of the computer printouts, and find information efficiently. Teachers had positive feelings about the use of the online catalog and thought that all students/teachers would benefit from formal instruction.

Helpful Hints:

- Standup workstations are preferable. Students are less likely to linger when standing as opposed to sitting to conduct a search. Students report that stand-up stations provide easier access.
- Color monitors at search stations are helpful to users.
- Printers are essential components at each online catalog search station.
- Detailed instructions on search strategies should be placed at each search station.
- Research should be taught as a process that students can replicate from one content area to another.
- Student training in use of Keyword function and Boolean strategy on the online catalog is necessary.
- Teacher training in use of Keyword function and Boolean strategy on the online catalog is needed.
- Students would benefit from instruction and frequent practice with the research process starting in early grades.
- An online catalog would be beneficial to students and teachers at all grade levels.

BENEFITS TO THE RESEARCH PROCESS

An important component of introducing the online catalog to students is a renewed emphasis on the research process. Often students come to the media center for information and do not have a structured approach to follow. This causes them to overlook many possible resources. Advantages of the process approach for students include:

- economy of time and effort
- identification of greater number of resources
- development of logical thinking processes
- ability to replicate the procedure from one content area to another

It is vital that the media coordinator and the classroom teacher work together to develop a logical process for research. A variety of methods can be used to help students in this endeavor: whole and small group instruction; signs and posters; instruction sheets; peer helpers, etc. The following pages include samples of research plans which have been used successfully with students.

Instructional Materials

Library media specialist use a variety of instructional methods with different user groups and demonstrate the effective use of newer media and technologies.

...from *Information Power*

Media Automation: Impact on Students

INSTRUCTIONAL MATERIALS

During the pilot project, the media coordinators taught information accessing skills and procedures. The purpose of doing this was to make it possible for students and teachers to be independent users of the online catalog and be able to use effectively the full range of functions provided by an online catalog.

The media coordinators at the two schools identified Keyword search function and Boolean search strategy as particularly beneficial in using the online catalog. Keyword was chosen because it located the greatest number of resources. For example, if students need information on the Civil War, how many students know to look under the Subject: United States--History--1860-1865--Civil War? Instead many would look under Civil War. When that strategy was used, 0 sources appear. When Title search function was used 8 sources were found. When Keyword search function was used 88 sources were found.

Boolean search strategy was identified as an important skill for students to know when trying to narrow and refine a search. Perhaps these sample entries provide a look at how Boolean combinations work:

Word #1	Word #2	Boolean Combination **AND**	Boolean Combination **OR**	Boolean Combination **NOT**
foster parents	adoption			
1	12	3	13	0
adoption	foster parent			
12	1	3	13	10
adopt*	foster parents			
24	1	7	25	18
acupuncture	medicine			
2	46	0	48	2
medicine	acupuncture			
46	2	0	48	46

Materials developed included: guide sheets, vocabulary, student activity sheets, lesson plans and research assignments that provide guided practice using the online catalog with special emphasis on Keyword and Boolean strategies.

Each media coordinator developed instructional materials and worked with teachers and students in selected classes to teach information accessing skills using the online catalog. Materials developed by personnel at Central Davidson Senior High School and West Davidson High School are presented in this booklet, each with a preliminary explanation as to its purpose and how it was used with students.

ACTIVITY 1

CORRELATION WITH BLOOM'S TAXONOMY (Overview)

Purpose:
This component is to be used to assist teachers in understanding the correlation between searching an online catalog and the learning process .

Description:
This document outlines how the research process correlates with Bloom's Taxonomy.

Result:
This listing was developed after the project began; thus, it was not used with the project teachers.

ACTIVITY 1-1

CORRELATION WITH BLOOM'S TAXONOMY

Knowledge

Define information needs
State research problem
Search the school's online database for general information sources by using Title, Author, Subject, or Keyword function of the Search Plus features of Circulation Plus/Catalog Plus

Comprehension

Develop strategy for use of a Keyword search by preparing a list of Keywords
Perform Keyword search

Analysis

Select the most useful sources located
Limit the search with Boolean connectors

Synthesis

Assess information--Is it relevant? Are there gaps in the information located?
Combine ideas
Search for new combinations of ideas
Perform Keyword/Boolean search using new ideas or fill the gaps

Evaluation

Determine the validity of the information
Make decisions and judgments about the information located
Prepare additional database searches, if necessary, before drawing conclusions and preparing the final paper/project

ACTIVITY 2

RESEARCH PROCESS (Overview)

Purpose:
The purpose of this set of materials is to establish and refine the focus of the research topic, to identify possible resources and to establish the concept of a "research process" with students.
At Central Davidson, the media coordinators worked to establish a "research process" that students could use again and again in all content areas.

Description:
This set of activities was compiled for use with eleventh-grade American Literature classes to provide a formal process for students to use in selecting and researching a topic. This set of activities is made-up of the following components:

1) Analyzer Description--provides rationale for using Analyzer
2) Research Topic Analyzer--a worksheet that provides teachers and students with a formal process for examining and refining a research topic
3) Keyword Search Terms--definitions of commonly used terms
4) Catalog Plus Instructional Lesson--a lesson plan to be used with Keyword Research Plan Sheet in conducting a Keyword search, and in conducting a research project around a selected literary work by an American author
5) Keyword Research Plan Sheet--a step-by-step set of directions for conducting Keyword and Boolean searches
6) The Research Process-- an outline of a research process for students to use as a reference.

This set of instructional components was delivered by the media coordinators. Each component was addressed over several class periods.

Results:
These materials would be appropriate and useful for student orientation to the media center and to research process skills. The amount of time expended on these activities will be determined by the needs of the student groups. These materials could also be useful as a tool for preparing student assistants for their role in the media center.

ACTIVITY 2-1

ANALYZER DESCRIPTION

In conducting research, a student often needs a structured way to pinpoint the topic and evaluate the availability of resources in the media center. A formal way to accomplish this is to use a research topic analyzer format. (See attached Analyzer.) A format of this type will help stimulate thinking, better define the topic, expand the types of resources used, and broaden the viewpoints presented.

The analyzer will assist the student in identifying the topic and main idea/focus, in providing a checklist of resources to consult in order to expand, validate and/or refine the idea, and in determining availability of resources on site. (If resources on the selected topic are unavailable in the media center, consideration should be given to selecting another topic.) To use the analyzer, the following steps are suggested:

- Teacher will use the analyzer with students to establish steps 1-5.
- Students will check the resources in the media center step 6.
- Students will evaluate findings and resources to state a refined main idea step 7.
- Students will begin the information search and develop the final product.

ACTIVITY 2-2

RESEARCH TOPIC ANALYZER

1. Student Name:
2. Research Topic:
3. Main Idea/Focus:

4. Primary Source (Literature Selection, etc.):

   Title _____

5. Problem statement: I (we) want to find out

   _____

6. Identify resources used for background information:
   Reference Materials:
   _____ Encyclopedias
   _____ Vertical File
   _____ Periodical Index (e.g. *Reader's Guide*)
   _____ Periodicals Used:
   Title of each with date:
   _____
   _____
   _____
   _____ Other Indexes Used (e.g. *NewsBank, SIRS*, etc.)
   Index Used:

   Article Titles: _____

   _____ Databases:
   _____ Online Catalog
   _____ *Dialog/Classmate*
   _____ Other

7. Refined Main Idea/Focus:

ACTIVITY 2-3

KEYWORD SEARCH--TERMS

Boolean terms - connectors used to combine terms for a search

Database - a collection of information stored in a large or host computer

Field - areas where the same type of information is stored/recorded

Highlights - means of selecting field or strategy to use in a search

Host computer - computer which contains the database

Keyword - a flexible way to find items by searching on a word or phrase which appears in the Title, Author, Subject, or Note field

Online - state of being connected by cables/wires to other computers

Printout - hard (paper) copy of material from disk or screen

Retrieve - to pull up information on a computer from another computer or data disk

Truncation - use of beginning letters of the word being searched for in the database

ACTIVITY 2-4

CATALOG PLUS INSTRUCTIONAL LESSON

Activity: Critical analysis of a selected literary work by an American author.
Student Age/Grade Level: 11th Grade
Subject: American Literature

Skill:
Students will analyze the chosen topic, locate potential resources at the media center search stations, assess the materials located, select the most relevant resources, and then organize and produce a research paper according to instructions provided by the classroom teacher.

Introduction:
Students will be given the lesson objective and introduced to relevant resources available in the media center.

Instruction:
Students will be instructed to use the "Research Topic Analyzer" (Activity 2-2) handout to locate background information and clarify the problem statement. Special instructions will be given in using the online catalog, emphasizing the Keyword function and Boolean connectors, or locating potential resources and in limiting the search findings.

Guided Practice:
The media coordinator and classroom teacher will give guidance and assistance to students in selecting, assessing, and using appropriate resources; in using Keyword and Boolean connectors; and in preparing bibliographies. Students will use the Keyword Research Plan Sheet (Activity 2-5) for this.

Enrichment/Follow-up:
The media coordinator will check with students on subsequent visits to the media center until the project is completed and turned in for evaluation. The media coordinator will request a copy of each bibliography to be used for library collection development.

Helpful Hints:
Limit the length of time each student can spend at the search stations at any one time.

ACTIVITY 2-5

KEYWORD RESEARCH PLAN SHEET

I. Terms to Know:

Boolean terms - connectors used to combine terms for a search

Database - a collection of information stored in the host computer

Field - areas where the same type of information is stored/recorded

Highlight - means of selecting field or strategy to use in a search

Host computer - computer which contains the database

Keyword - a flexible way to find items by searching on a word or phrase which appears in the Title, Author, Subject, or Note field

Online- state of being connected by cables/wires to other computers

Printout - hard (paper) copy of material from disk or screen

Retrieve - to pull up information on a computer from another computer or a data disk

Truncation - use of beginning letters of the word being searched for in the database

II. Keyword Search Plan

A. Topic

B. Main Idea

C. Keywords _____ Synonyms_____

D. Truncations/Wild Cards to use_____

E. Limiters (if needed)

III. Search at Catalog Search Station

A. Use Title, Author, Subject, Series Search

OR

B. Use Keyword Search Strategies: (to locate most complete listing of library holdings)

1. From Search menu, select **KEYWORD.**
2. At Keyword Search screen, type main idea(s).
3. Press Tab to select searchable field (Title, Author, Notes, Subject or ALL FIELDS).
4. Press **ENTER** to begin search.
5. If there are matches, press **ENTER**, select item to view.
6. To conduct a different search, press **ESC** to return to Keyword search screen.
7. Follow screen instructions.

TIP: To change **Field** indicator, type term, press **Tab** key, press key to toggle through options available. A greater # of hits occur when the **Field** selection is on **ALL FIELDS.**

IV. Boolean Search (To search on more than one word or phrase) Use to limit number of matches found.

A. At Keyword search screen, type first term. Press DOWN ARROW.

B. Boolean operators, AND, NOT, OR, appear. Note: OR combines search terms into a larger set. AND limits search by requiring each term to be present. NOT limits search by requiring a term to not be present.

C. Select a Boolean operator and press DOWN ARROW.

D. Type second term. Press DOWN ARROW.

E. Select second Boolean operator and press DOWN ARROW.

F. Type third term. Press ENTER. A window appears indicating number of matches found.

G. To view the matches, press ENTER.(If there are no matches, press ENTER to return to Keyword search screen.)

H. After viewing the records, press ESCAPE to return to Keyword search screen.

ACTIVITY 2-6

RESEARCH PROCESS

1. Identify topic.
2. Consult encyclopedia, print or nonprint, for overview of subject and to check for possible Keywords and bibliographic information.
3. Establish focus for research.
4. Build a list of Keywords pertinent to the topic; include synonyms, related terms, persons, chronology, etc.
5. List possible sources on the topic, giving consideration to the specific capability of each source.

Online Catalog. Information about books and AV materials in the media center.

Periodical Indexes. Topics found in magazines and newspapers Examples: *Reader's Guide*, *NewsBank*, *TOMS*, *Info Trac*, *Facts on File*. These indexes may be in print or nonprint form.

SIRS. Current information on science and social issues.

Vertical File. Information that has been collected locally. Examples: articles from local newspapers, maps, brochures, etc.

Current Periodicals. Topics too recent to have been indexed.

Reference Collection. Specialized reference works.

Community Resources. Materials in addition to those found in local media center and or resource persons.

DIALOG/CLASSMATE. Multiple databases which allow highly defined searching via telecommunications.

6. Review search plan with teacher and/or media coordinator.
7. Search for information.
8. Evaluate information.
9. Organize information.
10. Produce report.

ACTIVITY 3

SEARCH STRATEGIES
(Overview)

Purpose:
The purpose of this set of materials is to teach students search strategies needed in using an online catalog.

Description:
This set of activities was compiled for use with eleventh grade American Literature classes to provide a formal process for students to use in selecting and researching a topic. This set of activities consists of the following components:

1) Lesson Plan Search Strategies--a lesson plan for teaching each of the search functions on Search Plus.
2) Online Catalog--an activity that allows students an opportunity to compare the effectiveness of each of the five search functions.
3) Student Worksheet--worksheet on Boolean logic.
4) Keys to Successful Electronic Catalog Search--reference tool which provides detailed instructions on search strategies. This reference document should be placed at each search station.
5) Online Catalog Test--a quiz on search strategy terms.

Results:
These materials would be appropriate and useful for student orientation to the media center, for teaching research process skills, and for preparing student assistants for their role in the media center.

ACTIVITY 3-1

LESSON PLAN
SEARCH STRATEGIES

Objective: Students will be able to utilize the Online Search Station to perform searches for retrieval of needed information.

The Search Station Main Menu offers the following options:

Title
Author
Call #
Subject
Series
Keyword

Each search field will be discussed using the following outline:

1. **"Title"** Search:
   Select "Title." Press <ENTER>. Type title of selection. Press <ENTER>. Brief record is displayed. Screen will indicate copies available. Press <ENTER>. Full record of title will appear. Use arrow keys to move up and down page. Press <ESCAPE> to return to previous screens and Main Menu.

2. **"Author"** Search:
   Select "Author". Press <ENTER>. Type author's name, LAST NAME FIRST. Press <ENTER>. Scroll with arrow keys to author desired. Press <ENTER>. Screen displays brief information. Press <ENTER>. Screen displays full author record. Press <ESCAPE> to return to previous screens.

3. **"Call #"** Search:
   Select "Call #." Press <ENTER>. Screen appears with list by Call #s. For further information on a particular Call #, move cursor to selection. Press <ENTER>. Press <ESCAPE> to return to previous screens.

4. **"ISBN/LCCN"** Search:
   Is rarely used by students and will be omitted.

5. **"Subject"** Search
   Select "Subject." Press <ENTER>. Type subject desired. Press <ENTER>. Select "Subject" to examine. Press <ENTER>. Select "Title" to examine. Press <ENTER>. For additional information on the subject, press <ENTER>. Press <ESCAPE> to return to previous screens.

6. **"Series"** Search:
   Select "Series." Press <ENTER>. Type name of desired series. Press <ENTER>. Select item to examine. Press <ENTER>. For additional information, press <ENTER>. Press <ESCAPE> to return to previous screens.

7. **"Keyword"** Search:
   "Keyword" is a way of searching for information in a flexible way. To find items, search on a word or phrase which may appear in the title, author, note, or subject fields. If you can't remember the first word of a title, you can search for any word in the title.

   You can limit the search. You can ask for items with the Keyword or phrase appearing in all of the searchable fields or you can limit it to either title, author, subject, or note field. You can restrict the results by using partial (truncated) words or phrases and by combining words through the Boolean terms "And", "Or", "Not."
   AND - finds items about both words/phrases
   OR - finds items about one or the other word/phrase
   NOT - finds one word/phrase but not the other word/phrase

- To use Keyword options:
  At Search Plus menu, highlight Keyword (or type K). Press <ENTER>. Type the Keyword you want to locate. Press <ENTER>.
- To search on one or more words or phrases, use Boolean connecting terms: type the search word in the first field. Press the Down Arrow (Connector appears). Select the one that is applicable by using arrows to highlight choice. Press <ENTER>. The highlight bar moves to the next line. Type the word. (Choose Connector as before.) Type third word and press <ENTER> (or F10). To stop the search, press <ESCAPE>. If the computer finds a match/matches, press <ENTER> to view the MARC records for the matches. To return to the Search Plus Menu, press <ESCAPE>. To exit Search Plus, press CONTROL and type Q at the same time. This returns you to the Master Menu.

Note: F-1 will give help
F-3 will clear search fields
F-5 will view stop words
F-7 will view Keywords
F-3 will clear screen
ECS will remove Keyword window

TRUNCATION:

This is the process of using beginning letters of the word for which you are looking. To find words that begin with certain letters but end in various combinations, enter the beginning letters, followed by an asterisk (*). Ex. tur* will find Turkey, turkeys, Turner, turned, etc.

To find words that begin with certain letters but have a different final letter, enter the beginning letters, followed by a question mark (?). Ex. Tur? will find turn, Turk, turf, etc.

LIMITING BY TITLE, AUTHOR, SUBJECT, OR NOTE:

Press TAB to move the highlight bar to "All Fields". Change to either Title, Author, Subject, or Note field by pressing the Right Arrow or Left Arrow to locate the needed field. Press TAB to go back to the Words/phrases line. (You can change the Searchable Field for each Word/Phrase line.)

ACTIVITY 3-2

ONLINE CATALOG

Objective: Students will demonstrate competency in the use of the Online Catalog.

Using the "Flip Tract" at the Search Station, perform the following searches beginning from the Main Menu.

TITLE SEARCH

1. Enter a title:
2. How many copies does our media center have?
3. Who is the author?

AUTHOR SEARCH

1. Enter an author's name (last name first):
2. How many of his/her books do we have in our media center?
3. Name one of his/her books that we have.

SUBJECT SEARCH

1. Enter a subject:
2. How many books are listed on this subject?
3. List the title of one of these books.

CALL NUMBER SEARCH

1. Enter a call number:
2. How many books does the media center have with this call number?
3. Name one of the books.

SERIES SEARCH

1. Enter a series title:
2. How many books do we have in this series?
3. Name one of the books.

KEYWORD SEARCH

Remember: The number of "matches" displayed in the left hand column refers to the number of times the word or phrase occurs in the record, not the number of items. Please count the titles on the screen to determine the number of items available.

ACTIVITY 3-3

STUDENT WORKSHEET

Keyword searching uses Boolean logic. Remember that using the Boolean connectors (or, not, and) will **expand** or **limit** the search. Indicate what each connector does.

1. OR _____ your search.
2. NOT _____ your search.
3. AND _____ your search.

4. If you need help as you are searching, you can press _____ to get a Help screen.
5. If you want to pick up all the word endings of "teach," you place a/an _____ at the end of the root of the word.
6. What does the ? do?

7. Give an example of what the ? does.

8. Do a Keyword search using AND. Example: Love AND Marriage
   How many matches did you get?
   How many items are listed?

9. Press the _____key to clear the Keyword Search Screen.

10. You press the _____ key in order to get back to the Main Menu.

11. If you want to print out a screen, you press _____ and the printing begins.

Revised, Anson County Schools

ACTIVITY 3-4 (COPY AND CUT TO CREATE BOOKLET)

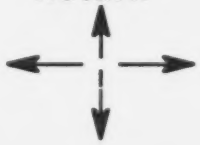
Keys to a Successful

Electronic Catalog Search

Designed for use at
Central Davidson High School
Lexington, NC

Keys important to searching,
other than "letter" keys:

ESC
Return



BACKSPACE
Function (F) Keys
F-1 = to exit

To search by: TITLE, AUTHOR, CALL #, SUBJECT, SERIES:

Press Arrow Keys to select desired index
Press ENTER
Type **word/s** for search on the prompt line
Press RETURN
Press arrow keys to highlight desired item
Press RETURN
Brief record appears
Press RETURN
Complete Record appears
(Pressing RETURN will toggle between brief and complete record)
ESC to MAIN MENU to search for another item.

Keystrokes to use to search on KEYWORD:

1. Select (highlight) **KEYWORD**
   Type in term(s) RETURN
   Screen indicates # of hits. Press RETURN
   Select item to view. Press RETURN
   Complete record appears on screen.
   (Copy or print needed information.)
   ESC until return to KEYWORD screen
   F-3 to erase term or
   Press **down arrow** to narrow search

TIPS: To change **Field** indicator, type term, press **Tab**, press → key to toggle through options available.

A greater # of hits occur when the **Field** selection is set on **ALL FIELDS.**

2. **Truncation**:

Finds any words that begin with the same root. Type in part of term and an asterisk (*).

Ex.: "Techno**" to retrieve information on technology, technological, etc.

Wildcard:

Finds all words that share the same specified characters. Type in term followed by a question mark (?)

Ex.: "Wom?n" (woman, women)

Limiters:

Limit by dates

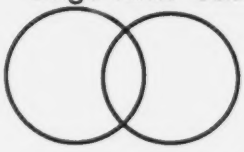
Limit by reading level

3. BOOLEAN Search Strategies:

Boolean Operators: OR
AND
NOT

Examples: Dogs **OR** Cats

Dogs **AND** Cats



Dogs **NOT** Cats

ACTIVITY 3-5

ONLINE CATALOG TEST

place the letter of the correct term in the blank.

1. _____ Connectors used to combine terms for a search.

2. _____ A collection of information stored in a large or host computer.

3. _____ Areas where the same type of information is stored/recorded.

4. _____ Means of selecting field or strategy to use in a search.

5. _____ Computer which contains the database.

6. _____ A flexible way to find items by searching on a word or phrase which appears in the Title, Author, Subject, or Note field.

7. _____ State of being connected by cables/wires to other computers.

8. _____ Hard (paper) copy of material from disk or screen.

9. _____ To pull up information on a computer from another computer or a data disk.

10. _____ Using beginning letters of the word being searched.

A. PRINTOUT
B. TRUNCATION
C. BOOLEAN TERMS
D. ONLINE
E. RETRIEVE
F. DATABASE
G. FIELD
H. HOST COMPUTER
I. KEYWORD
J. HIGHLIGHT

ACTIVITY 4

KEYWORD SEARCHING--
A CLASS STUDY

Purpose:

This activity was used to discover whether Keyword searching provides greater compilation of resources for the student than he could locate using subject searches only. The project participants also sought evidence that Keyword searching offers the strongest motivation for making an outline catalog available to the public school student.

Description of activity:

A specific lesson plan was provided to a ninth-grade class relating to a recent study of *Romeo and Juliet*, the *Odyssey*, and Greek mythology. The media specialist went to the classroom with visual aids and handouts to instruct the class in using Keyword and to explain and outline the assignment. Students selected one of three subjects in preparation for the next several days in the media center.

The class was divided into three groups because of a limited number of word processing stations (writing lab consists of eight Macintosh computers using Microsoft Works software). One group began its online catalog and Keyword searching to secure materials for resources needed, a second group drafted the first part of the paper which related to the events of the literature, while the third group began the study of word processing. The word processing assignment was to relate their thoughts and feelings about the subject assigned to their present world and store for use later in the final draft of the paper.

Results:

The activity took six to nine days for all students to have a chance to gather materials and have time at a computer to write the document. Additional time was needed to correct mistakes after the teacher returned the drafts.

Time spent locating materials was reduced by the Keyword function of the system, and this allowed more time to assimilate facts and organize ideas. The final outcome, a 3R (READ-RESEARCH-RESPOND) paper, reflected good knowledge of the literary work studied, the ability to use the online catalog to retrieve materials efficiently, and the ability to relate the literature to real-life situations, such as gangs, drugs, suicide and war.

ACTIVITY 4-1

ODYSSEY

READ RESEARCH RESPOND

Write a 3R paper, describing some of the elements of warfare practiced in the *Odyssey*, describing weapons, strategy, and protective practices and clothing.

Locate a book using the online catalog on warfare and list some of the major points the author makes. Attach a printout of one search.

Finally, write your thoughts about war and whether it is justified in defending your country, its needs, or killing those serving on the other side. Include whether you support the military draft.

Keywords you may want to use:

WAR
WAR STORIES
WAR POETRY
WAR CORRESPONDENTS

ACTIVITY 4-2

ROMEO & JULIET

READ RESEARCH RESPOND

Write a 3R paper of two pages on suicide. Plan a good paper with an introduction, supporting information, and a conclusion.

Describe the cause of Romeo and Juliet's suicide, giving the names of the people who helped cause the deaths. Give their actions and tell who assisted them and how.

Locate a book on suicide using the online catalog. (Provide a printout of the book reference from the online catalog.) From this book, provide several facts you learned about suicide, such as premeditation, success rate, therapy success and number of suicides or attempts in a given year.

Finally, state your position on the ethics of suicide. Is it justified? If so, in what cases? Is suicide a sin condemning the soul to hell? Discuss your feeling of confidentiality should a family member or a friend tell you of plans to take his/her own life.

Keywords you may want to use:

SUICIDE
PREMEDITATION
DEATH

ACTIVITY 4-3

MYTHOLOGY

READ RESEARCH RESPOND

Write a 3R paper of two pages on primitive religions using the Greeks you have just studied. Explain how the god of war, god of harvest, god of love, etc. functioned in the daily lives of the people in early times.

Locate a book on religions and provide some facts about a religion--your own or that of another culture. (Attach a printout on one book you locate in the online catalog.) The facts should include why and how it is different from your study of mythology.

Finally, describe the religious practices of a church in the area with which you are familiar, such as when services are held, who leads the church, what help is provided church members and how the church betters the community.

Keywords you may want to use:

RELIGION
PRIMITIVE
GODS
WORSHIP
CHURCH

ACTIVITY 4-4

SEARCH PLUS PRACTICE

Name_____

Check below on the left the two subjects you will research. On the right of the chosen subject, write the number of resources you find available through the online catalog.

RESEARCH TOPIC	NUMBER OF RESOURCES
___GANGS____	
___DRUGS____	
___PEER PRESSURE____	
___SELF-PERCEPTION____	
___SUICIDE____	
___VIOLENCE_____	

Example

Search Plus Subjects Press F1 for Help

1	Submarines
1	Substance abuse--Addresses, essays, lectures
1	Substance abuse--Treatment--addresses, essays, lectures
1	Suburban Life--Fiction
1	Subversive activities--United States
6	Success
2	Success in business
1	Success--United States
6	Suicide
1	Suicide--Addresses, essays, lectures
2	Suicide--Fiction
1	Suicide--Prevention
1	Suicide--United States--Prevention
1	Suicide--United States--Prevention--Juvenile Literature
1	Suicides in their town, eighteen year old Kerry's girlfriend
1	Sullivan, Ed, 1902

Search Plus List is Sorted by Call No. Press F1 for Help

Call Number	Title
362.2 L	Dead Serious: a book for teenagers
362.2 Langone	Dead end: a book about suicide
Fic Ben	The Dark Corridor
Pro 362.2 Leder	Dead stories: a book for teenagers